

ABSTRACT

The present invention provides an iterative method of allocating bandwidth in a twisted pair modem communication network in order to maximize communications speed while reducing NEXT interference. The method determines frequency bandwidths that cause NEXT interference and eliminates these harmful frequencies. In further embodiments, the invention adjusts other parameters of transmission such as decreasing bitloading rates and power within problematic frequency bandwidths, while increasing power and bitloading in the remaining frequencies. The methods provide an iterative process that ensures an appropriate signal to noise ratio and maximum data transfer.